

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2008/056446

International filing date (day/month/year)  
10.03.2008

Priority date (day/month/year)  
09.03.2007

International Patent Classification (IPC) or both national classification and IPC  
INV. A61K8/19 A61Q11/00 C11D7/02 A23L1/304 A61K31/295 A61K33/26 D06L3/02

Applicant  
BATTELLE MEMORIAL INSTITUTE

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Date of completion of  
this opinion

see form  
PCT/ISA/210

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US2008/056446

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of:
  - ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ on paper
    - ☐ in electronic form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in electronic form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US2008/056446

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has, within the applicable time limit:
- ☐ paid additional fees
  - ☐ paid additional fees under protest and, where applicable, the protest fee
  - ☐ paid additional fees under protest but the applicable protest fee was not paid
  - ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
  - ☒ the parts relating to claims Nos. 1 partially, 3, 4-8 partially, 12-17, 31

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	<u>3-8, 13, 15, 16</u>
	No: Claims	<u>1, 12, 14, 17, 31</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1, 3-8, 12-17, 31</u>
Industrial applicability (IA)	Yes: Claims	<u>1, 3-8, 12-16, 17, 31</u>
	No: Claims	

2. Citations and explanations

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/US2008/056446

Reference is made to the following documents:

- D1: DATABASE WPI; AN 1987-153978 XP002484983 & JP 62 091225 A  
(NIPPON SODA CO) 25 April 1987 (1987-04-25)
- D2: US-A-5284642
- D3: DATABASE WPI; AN 1986-110452 XP002484984 & JP 61 053398 A
- D4: US-A-3372125
- D5: DATABASE WPI AN 1984-233949 XP002484985 & JP 59 139314 A
- D6: US-A-2005/049157
- D7: FR-A-2805162

**Re Item IV**

**Lack of unity of invention**

The problem underlying the present application is the provision of methods and cleaning compositions, food compositions, pharmaceutical compositions, articles, medical treatments ect.

Inventions 1-13 are different solutions to this problem, their common concept being the use of ferrate.

The use of ferrate in cleaning compositions is already known in the art see: US-B-5380443 (cited in the application, cleaning water, see claims), JP-A-61053398 and JP-A-62091115, US-A-5284642 (see col. 4, lines 6-10, claim).

Thus the common concept identified above is not novel and the problem underlying the application can be redefined as the provision of further methods and cleaning compositions using ferrate.  
inventions 1-13 being separate solutions to this problem.

As no other technical features can be distinguished which, in the light of the prior art, could be regarded as special technical features in the sense of Rule 13.2 PCT, the ISA is of the opinion that there is no single inventive concept underlying inventions 1-12 in the sense of Rule 13.1. PCT and consequently there is lack of unity and the different inventions, not belonging to a common inventive concept, can be formulated as follows:

Invention 1 (claim 1 partially tooth; claims 3; claims 4-8 (partially, tooth); claims 12-17, claim 31)

A method of cleaning a tooth using ferrate, a toothpaste, a tooth whitening appliance, a kit a method of cleaning a mouth.

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International application No.

PCT/US2008/056446

Invention 2 (claim 1, partially article; claim 2, claims 4-8, partially, article; claims 9-11, 20)

A method of cleaning an article using ferrate.

Invention 3 (claim 18).

A method of treating a human or nonhuman animal by administering ferrate.

Invention 4 (claim 19)

A composition comprising encapsulated ferrate

Invention 5 (claims 21 and 22)

A composition comprising ferrate and food

Invention 6 (claim 23)

A composition comprising ferrate and a medicament.

Invention 7 (claim 24)

An article comprising a ferrate composition.

Invention 8 (claim 25)

A method of treating fur or hair.. providing a ferrate composition.

Invention 9 (claim 26)

A method of treating an infected plant.. providing a ferrate composition

Invention 10 (claim 27)

A method of declogging a drain... providing a ferrate composition

Invention 11 (claim 28)

A method of disposing of unwanted drugs.. providing a ferrate composition

Invention 12 (claim 29)

A dispenser for ferrate

Invention 13 (claim 30)

A chewing gum comprising ferrate.

It should be noted that for defining the different inventions, the ISA has taken into account the balance between necessary search efforts and the levying of additional fees.

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

The following examination is limited to invention 1

**2. Novelty Art. 33(2)PCT**

Preliminary Remarks

Claim 17 relates to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(I) PCT).

Claim 17 relates to subject-matter considered by this Authority to be covered by the provisions of Rule 39.1(iv) 67.1(iv) PCT. The patentability can be dependent upon the formulation of the claim. The EPO, for example, does not recognise as patentable claims to the use of a compound in medical treatment, but may allow claims to a product, in particular substances or compositions for in a first or further medical treatment.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 12, 14 and 31 is not new in the sense of Article 33(2) PCT.

**2.1.** D4 discloses a composition for cleaning teeth comprising a ferrate in combination with an abrasive such as silica and a chelating agent (see col. 4, line 6-57, col. 2, lines 15-56 and col. 5, lines 59-75).

Consequently D4 takes away the novelty of independent claim 12 and claim 14 depending thereof.

**2.2.** D5 describes dentifrices comprising ferrite. Ferrate is not mentioned in D5.

**2.3.** Documents D6 and D7 disclose cleaning formulations comprising an indicator producing a color change after a period to indicate the thoroughness of the cleaning. (see D6, page 1 par 5, page 5, par 49-50; claims; D7, claims).

Consequently, the subject-matter of independent claim 31 is anticipated by the disclosure of documents D6 and D7.